

**THERMOSET POLYMERS WITH  
DISPERSED FLUOROCARBON ADDITIVES**

**WE CLAIM:**

1. A mixture comprising (1) a cross-linkable thermosetting resin providing composition and intimately admixed therewith, (2) from about 0.01% to about <1.0%, by weight, based on the weight of the mixture, of a fluorocarbon additive selected from the group consisting of a fluorocarbon oil, a fluorocarbon gum, a fluorocarbon grease and mixtures thereof, said fluorocarbon additive having a lower surface energy than that of the thermoset resin formed by cross-linking said composition.

2. A composition according to claim 1 wherein said additive is an oil.

3. A composition according to claim 2 wherein said fluorocarbon oil is selected from the group consisting of fluorinated hydrocarbon polyethers and fluorinated hydrocarbons.

4. A composition according to claim 3 wherein said fluorocarbon additive is a perfluorinated polyether.

5. A composition according to claim 2 wherein said additive is perfluorinated polypropylene oxide.

6. A composition according to claim 1 wherein said additive is a gum.

7. A composition according to claim 1 wherein said additive is a grease.

8. A method of forming a composition of matter comprising a cross-linked thermoset resin and from about 0.1% to about <1.0%, by weight, of a fluorocarbon additive selected from the group consisting of a fluorocarbon oil, a fluorocarbon gum, a fluorocarbon grease and mixtures thereof, said fluorocarbon additive having a lower surface energy than that of said resin, said method comprising intimately admixing said fluorocarbon additive with a cross-linkable thermosetting resin providing composition (I) for a time sufficient to produce a substantially homogeneous admixture comprising said resin and said fluorocarbon additive, followed by subjecting said mixture to conditions which provide a cross-linked thermoset solid resin wherein the concentration of said fluorocarbon additive through a cross-section of said

solid resin composition is lower in the interior thereof and higher at the surfaces thereof.

9. A method according to claim 8 including the preliminary step of forming a premix consisting of a fractional portion of said composition (I), in particulate form substantially uniformly wetted with said fluorocarbon additive and mixing said wetted first fraction with the remainder of said composition (I).

10. A method according to claim 8 wherein said additive is an oil.

11. A method according to claim 10 wherein said fluorocarbon oil is selected from the group consisting of fluorinated hydrocarbon polyethers and fluorinated hydrocarbons.

12. A method according to claim 11 wherein said fluorocarbon additive is a perfluorinated polyether.

13. A method according to claim 10 wherein said additive is perfluorinated polypropylene oxide.

14. A method according to claim 8 wherein said additive is a gum.

15. A method according to claim 8 wherein said additive is a grease.

16. The composition of matter produced by the method of claim 8.

17. A composition according to claim 16 wherein said additive is an oil.

18. A composition according to claim 17 wherein said fluorocarbon oil is selected from the group consisting of fluorinated hydrocarbon polyethers and fluorinated hydrocarbons.

19. A composition according to claim 18 wherein said fluorocarbon additive is a perfluorinated polyether.

20. A composition according to claim 17 wherein said additive is perfluorinated polypropylene oxide.

21. A composition according to claim 16 wherein said additive is a gum.

22. A composition according to claim 16 wherein said additive is a grease.

23. A composition of matter comprising (1) a cross-linked thermoset resin and (2) from about 0.1% to about <1.0%, by weight, based on the weight of the composition, of a fluorocarbon additive selected from the group consisting of an oil, gum, grease and mixtures thereof, said additive having a lower surface energy than that of said resin, wherein the concentration of said additive through a cross-section of said solid resin composition is lower in the interior thereof and higher at the surfaces thereof.

24. A composition according to claim 23 wherein said additive is an oil.

25. A composition according to claim 24 wherein said fluorocarbon oil is selected from the group consisting of fluorinated hydrocarbon polyethers and fluorinated hydrocarbons.

26. A composition according to claim 25 wherein said fluoro-carbon additive is a perfluorinated polyether.

27. A composition according to claim 24 wherein said additive is perfluorinated polypropylene oxide.

28. A composition according to claim 23 wherein said additive is a gum.

29. A composition according to claim 23 wherein said additive is a grease.